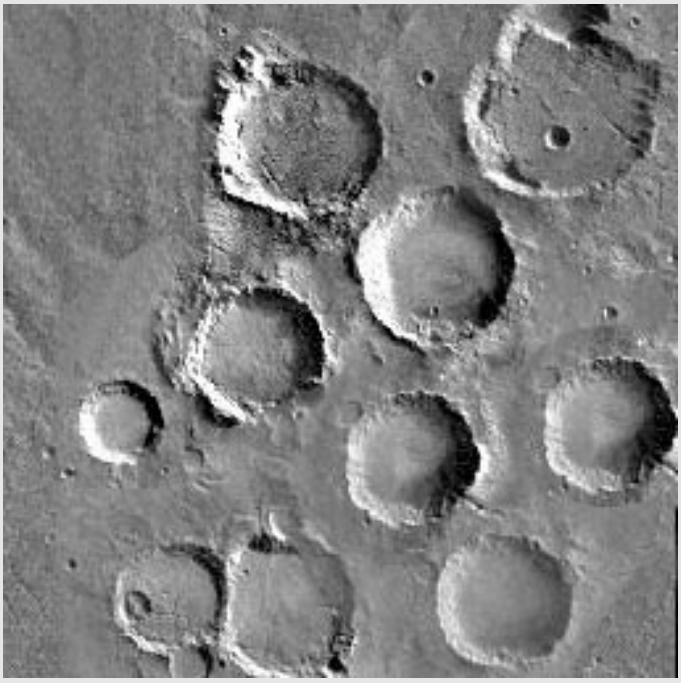
THE AMES Astrogram
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION AMES RESEARCH CENTER, MOFFETT FIELD
March 26, 2001 on-line at: http://amesnews.arc.nasa.gov

Ames Mars internet project excites public interest

Members of the public may someday help NASA scientists pick potential landing sites for actual human Mars missions. In addition, volunteers may look for martian water activity and map other planets and moons.



Typical craters on the surface of Mars like those identified by "clickworkers" in the Ames pilot project.

In an on-going pilot project, scientists at Ames are investigating the capability of volunteers to rapidly and accurately analyze space images. To date, about 100,000 martian craters have been marked repeatedly for position and size. The work has been completed in just a few months by 50,000 'clickworkers' hooked to a small desktop computer via the Internet. It is estimated that this task would otherwise have taken several work years to complete. The project is based on the premise that pooled brain power can analyze images better than any supercomputer.

"It's a huge effort for a scientist to mark every crater on Mars. It doesn't take a rocket scientist to recognize an eroded crater, but it probably takes a human being," said Bob Kanefsky, clickworker project leader at Ames and principal author of a technical paper describing the effort. His co-authors are Nadine Barlow of the University of Central Florida, Orlando and Virginia Gulick of the Search for Extraterrestrial Intelligence (SETI) Institute, Mountain View, CA.

"Each and every human brain has image-processing abilities unrivaled by any supercomputer," Kanefsky said. "The Internet now makes it possible to create a distributed network of human processing power. We are now testing the ability of pooled efforts to accomplish time-consuming, but scientifically useful, tasks."

"Every crater on Mars larger than 10 kilometers (about 0.62 mile) and within 30 degrees of the equator has been gone over 5 to 10 times," he said. These results, showing the potential of this new technique, were presented to the planetary science community at the recent Lunar and Planetary Science Conference in Houston.

"The contributor clicks on four points on a crater rim and watches a circle draw itself around the rim," explained Kanefsky. "On completion, pressing a button sends latitude, longitude and diameter to our database." The experiment showed that volunteers are within a 'few pixels' of the accepted positions of craters, according to Kanefsky.

"We're also asking clickworkers to classify craters as 'fresh,' 'degraded' or 'ghost,' which takes a little more judgment," Kanefsky said. "Accuracy can be improved by cross-checking redundant inputs from different clickworkers."

Volunteers can choose to mark either digital image mosaics from the Mars Viking Orbiter mission (1976-1980), or high-resolution images from the camera onboard the Mars Global Surveyor spacecraft that now is mapping the red planet. The experiment's web site is at http://clickworkers.arc.nasa.gov

"Some people are tempted to compare the clickworkers effort with the tradition of amateur astronomy, especially since Mars used to be just an astronomical object until late in the last century," said Kanfesky. "One difference is that becoming an amateur astronomer requires a big commitment; if you lose interest 10 minutes into setting up your telescope, you haven't contributed anything."

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"The revolution in science requires larger investments in basic research. We are not getting the money today . . . I particularly commend to the committee to go to the Ames NASA laboratory and just spend a half day getting briefed on what they're doing, combining supercomputing, nanoscale science and technology and biology . . . [it] is, I think, the most interesting single facility in the United States."

— Excerpt from the Mar. 21, 2001 testimony of former Speaker of the House Newt Gingrich before the House Armed Services Committee

Ames programs prominently featured at AAAS meeting

Ames scientists and engineers recently had an opportunity to show off their projects as they staffed an exhibit during the annual meeting of the American Association for the Advancement of Science (AAAS) held in San Francisco. Over 5,000 scientists, along with numerous students and members of the media, came by to visit the large exhibit and learn more about Ames' biotechnology, nanotechnology and information technology programs.

Ken Souza from Ames also organized a special session during the meeting that featured a panel discussion about the scientific motivation for exploring space and the challenges, both physiological and technological, to expanding our presence in the solar system. The well-attended session was lead by Academy Award-winning director James Cameron, a space enthusiast who is currently working on a project about a future human mission to Mars. The panel featured John Charles of JSC, who provided an overview of human missions beyond Earth's orbit, with emphasis on a mission to Mars; Laurence Young of the Massachusetts Institute of Technology, who examined the biological challenges of long-duration space flight; Chris McKay, a planetary scientist at Ames, who summarized the role of recent robotic missions to Mars; and John Hines, also from Ames, who discussed some of the revolutionary advanced technologies required to support future human missions beyond Earth's orbit. Interest in the session was evident by the numbers of interviews panel members were asked to give to a variety of media organizations.

The AAAS is the world's largest general science organization and publisher of the peer-reviewed journal Science. It has more than 138,000 members and 275 affiliated societies.

BY LAURA LEWIS

photo by Dominic Hart

Exhibit attendees at the recent American Association for the Advancement of Science (AAAS) held in San Francisco.

Kraft visits Ames

photo by Jonas Diño

Dr. Christopher Kraft, NASA's first flight director (right) signs a copy of his book "Flight: My Life in Mission Control" for Ian MacLure (left) of Ames' Crew Vehicle Systems Research Facility. Kraft visited Ames on March 16 and was interviewed by John Fowler (KTVU, FOX TV) for an upcoming "My 20th Century" piece.

Quality and safety award winners

One special award that is given by NASA headquarters is a recognition of exemplary performance in contributing to the quality and/or safety of products, services, processes or management programs. The quality and safety achievement recognition (QASAR) awards are agency-level presentations given to individuals who contribute to significant advances in safety and quality programs in a variety of capacities. One nominee from each center is submitted to headquarters to be considered for awards in each of several categories. Centers may nominate their candidates as they see fit. At Ames, center-wide QASAR awards are given to individuals nominated by their peers late each year.

This year, three winners of Ames QASAR awards have been selected to be eligible for the agency awards. The winners in each category are the following.

Stanleigh Phillips (Safety and Mission Assurance Personnel category). Phillips is leading the Ames voluntary protection program certification effort and has been involved in many successful occupational safety initiatives and programs at the center.

George Sarver (NASA Employee Outside of Safety and Mission Assurance category). Sarver serves as the manager for the Space Station Biological Research Project, which includes a comprehensive safety and mission assurance (S&MA) effort. He has provided active management support to ensure that the S&MA requirements are being effectively integrated into many highly complex systems for both U.S. developers and international partners.

Ernie Breeden (NASA Prime or Sub Contractor category). Breeden is the lead safety and mission assurance representative assigned to support the Stratospheric Observatory for Infrared Astronomy (SOFIA) project at the Raytheon facility located in Waco, TX. Breeden was instrumental in assisting the aircraft modification contractor in formulating work instructions and checklists to identify, describe and safely perform high-risk maintenance tasks, with significant safety benefits.

The winners of the Ames nominations will be recognized during an upcoming Ames executive safety council meeting. Please join in congratulating the winners of these prestigious awards.

BY DOUG SMITH

NASA Astrobiology institute announces new teams

NASA has selected four new teams to become part of the agency's Astrobiology Institute (NAI), a national and international research consortium that studies the origin, evolution, distribution and future of life on Earth and throughout the universe.

After a highly competitive peer-review process, teams from Michigan State University (MSU), East Lansing; the University of Rhode Island (URI), Kingston; the University of Washington (UW), Seattle; and NASA's Jet Propulsion Laboratory (JPL), Pasadena, CA, were recently notified of their selection.

These new teams of researchers will bring specialized expertise to the Institute, allowing its members to more deeply investigate the diversity of life inhabiting extreme environments on Earth and to develop analytical models to search for habitable planets outside our solar system.

The MSU team, led by Dr. Michael Thomashow, will examine low-temperature Earth analogs to possible life on Mars and Europa by analyzing genetic material and proteins of bacteria from the Arctic and Antarctic permafrost. Data from the gene-expression analysis will be important for understanding the biology of "hitch-hiker" microbes traveling through space on meteorites and other bodies.

The University of Rhode Island team, led by Dr. Steven D'Hondt, will examine the deep biosphere of the Earth and the "extremophile" communities that thrive in this extreme environment. This research will include developing bio-geochemical markers for life for use on future astrobiology missions.

The new team based at UW will address a broad series of important areas in astrobiology, ranging from biogeochemistry of the earliest life on Earth to the formation, evolution and potential for life on planets outside our solar system. This team is led by Dr. Peter Ward.

Dr. Victoria Meadows will lead the JPL team that will conduct research on recognizing the biospheres of extrasolar planets. The results of her team's work are expected to directly influence the development of future space missions such as Terrestrial Planet Finder, which will look for habitable planets around other "suns."

With these additions, the NAI represents a partnership between NASA and 14 major national and three international research institutions to promote, conduct and lead integrated, multidisciplinary astrobiology research and to train a new generation of researchers in the discipline of astrobiology.

The NASA Astrobiology Institute, with central offices at Ames was founded in 1997.

More information about the NAI is available on the Internet at: http://nai.arc.nasa.gov/

BY KATHLEEN BURTON

Center Briefs

Goddard's 75th anniversary

Seventy-five years ago, on March 16, 1926, Dr. Robert H. Goddard successfully launched the first liquid-fueled rocket. Milton Lehman's book about the life of Robert Goddard, "This High Man," notes that his flight of the first liquid-fueled rocket was called "a feat as epochal in history as that of the Wright brothers at Kitty Hawk."

"That flight became the underpinning of everything that we are able to do in space today, and which we take for granted," said William Townsend, deputy director of the NASA facility named after the rocket pioneer, the Goddard Space Flight Center in Greenbelt, MD.

NASA satellite tracks smog

New research sponsored by NASA may soon help scientists do a better job of tracking pollution plumes around the world and help provide people more advance warning of unhealthy air.

Researchers have discovered that smoke and smog move in different ways through the atmosphere. A series of unusual events several years ago created a blanket of pollution over the Indian Ocean. In the second half of 1997, smoke from Indonesian fires remained stagnant over Southeast Asia while smog, which is tropospheric, low-level ozone, spread more rapidly across the Indian Ocean toward India. This situation was exacerbated by El Niño. At the same time, additional smog from African fires streamed over the Indian Ocean and combined with the smog from Indonesia, creating an aerial canopy of pollutants.

Researchers tracked the pollution using data from NASA's Earth Probe Total Ozone Mapping Spectrometer (TOMS) satellite instrument. "TOMS is the only satellite instrument that follows both smoke and smog, globally," said Anne Thompson, NASA Earth scientist at Goddard Space Flight Center, Greenbelt, MD.

SHOT signs Space Act agreement

Space Hardware Optimization Technology (SHOT), Inc., has signed an agreement with NASA that allows the company to conduct flight experiments for commercial customers on the agency's space shuttles. It is now one of only four non-university-based companies in the nation with such an agreement with NASA.

"The space shuttle fleet has long been used for grant-based, pure-science investigations," said SHOT president and CEO Mark S. Deuser.

"Less often have corporations been able to conduct industry-driven product research in space. We're excited to be able to begin offering commercial customers an additional opportunity to participate in microgravity studies."

Opportunity knocks: the Ames EOPO open house is big hit!

In early March, over a hundred NASA employees and contractors attended the Equal Opportunity Programs Office (EOPO) open house. Everyone in attendance had ample opportunity to snack and mingle. Thanks to Bill Henderson of Human Resources, some were even able to practice their salsa dancing.

photo by Tom Trower

Visitors explore the new office quarters at the EOPO open house held recently in Bldg. 19.

The EOPO open house event was designed to serve multiple purposes. For many at Ames, it was the first opportunity to meet several of the new staff members and become familiar with the new office space. Another reason for the open house was to provide all Ames employees with an opportunity to learn more about the specific services provided by the EOPO office located in Building 19. The EOPO receptionist is located in Room 1091 and can provide written materials on equal opportunity rights as well as procedures and services.

The mission of the EOPO is to promote and advocate equal opportunities for underrepresented groups at Ames, and to increase access to Ames-related research careers for all Americans.

EOPO staff strive to accomplish their mission through recruitment, career advancement, complaint resolution and advocacy of center support to minority institutions. The ultimate purpose of the office is develop and maintain a diverse workforce. Adriána Cardenas is the division chief and, when fully staffed, there will be a total of 10 office members. Although staff members have specific assigned areas of responsibility, the overall goal is for the staff to be team oriented, cross-trained and capable of participating in all program areas and services.

The EOPO staff encourages all Ames employees to drop by and pick up information sheets describing services provided and staff profiles. For more information, contact Deborah Strine at ext. 4-6507.

BY REYMUNDO ANTHONY

Ames Mars internet project excites public interest

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"A clickworker can contribute as little as five minutes, and if thousands of people do that, it really adds up," Kanefsky explained. "Although there are many surprisingly dedicated clickworkers, over a third of the work was accomplished by people who worked for one sitting and never came back."

The clickworker technique can be extended to landforms other than craters and even to data other than images–to anything that uses human talent for recognizing specific patterns, according to Kanefsky. "We hope to use it as a first stage in mapping fluvial features by having clickworkers map features that have a linear appearance," he said. Fluvial features are those found in, or made by, a river.

The pooling of human brain power also can be used to do quantitative analysis, according to Kanefsky. "During the Mars Pathfinder mission, the sizes and locations of 1,400 rocks were measured to confirm that the landing site was an outflow channel as expected from orbital images," he said. "Some science questions require that a lot of little objects be surveyed and plugged into a quantitative computer model," Kanefsky explained.

"The current clickworkers project is more likely to be limited by its computational resources than by the amount of data available," he said. "The experiment is a pilot study, using only one machine as a web server — an outdated model we had sitting on a shelf."

BY JOHN BLUCK

LaunchPad sef for lift off

NASA's Information Power Grid (IPG) encompasses computers at Ames' Numerical Aerospace Simluation (NAS) systems division as well as others at Glenn and Langley Research Centers. Now, for scientists running jobs on this distributed computer network, a simple job-launching tool will save both valuable research time and make the best use of resources. Working in collaboration with the San Diego supercomputer center, the National Computational Science Alliance (NCSA), Argonne National Laboratory, and the University of Indiana, NAS's portal development group is designing the IPG LaunchPad, a web-based user interface or portal.

With LaunchPad, users will be able to create and submit jobs, track job progress, and select resources using the Web. Using the LaunchPad tool, scientists will eventually be able to manipulate files remotely and create a customized view of the tool to meet their individual needs.

The IPG LaunchPad was designed using the grid portal development kit developed by Jason Novotny at NCSA (http://dast.nlanr.net/Features/GridPortal). The tool consists of easy-to-use windows for users to input job information, such as the amount of memory and number of processors needed. The IPG requires repetitious entering of passwords at certain stages during a job launch to the grid. LaunchPad cuts down on a researcher's workload by automatically sending required passwords when requested, while maintaining security.

"The vision for LaunchPad is that it will enable NASA scientists and engineers to access remotely located IPG resources — including computers, data archives, instruments, and software resources — all with a single log-in from any desktop computer," said Arsi Vaziri, IPG deputy project manager.

"IPG LaunchPad is an evolutionary tool, and we plan to make enhancements as needed. The core functionality will be finalized sometime this year," explained George Myers, NAS scientific consultant and portal development group lead. Some of the team's near-term goals are to submit and run batch jobs on the grid using LaunchPad, enable secure file transfers, and display current job status information.

In the next phase, Myers' group will add a customizable environment. "Our goal is to make LaunchPad modular and customizable so that researchers can build their own application-specific portal from it," said Myers.

LaunchPad's basic functionality was demonstrated at the SC2000 High Performance Computing and Networking conference last November in Dallas. "The IPG LaunchPad demo at SC2000 went extremely well," recalls Leigh Ann Tanner, deployment and integration project manager for the IPG. "Several organizations, including Pacific Northwest Lab, were interested in the LaunchPad's capabilities."

The next phase for expanding LaunchPad's capabilities will be to focus on the development of application-specific portals. "If we can accomplish this, we will create an interface that is flexible enough to allow users to customize their views of LaunchPad" explained Myers. Once IPG LaunchPad permits researchers to access all resources on the grid, they will be able to accomplish anything they can currently do — all from any web browser, anywhere in the world. See http://www.nas.nasa.gov/User/Training/Events/SC00/ARC/launchpad.html

For more information about NASA's Information Power Grid, visit us at: http://www.nas.nasa.gov/IPG

By Holly A. Amundson

Featured library user

Want to know more about our chief scientist, Stephanie Langhoff? Stop by the Technical Library (N202) bulletin board. Read all about her accomplishments and current job description.

Get a copy of her paper that won the 1989 H. Julian Allen Award.

AAIA honors Ames' Sridhar

In February, the American Institute of Aeronautics and Astronautics (AIAA) announced the election of Banavar Sridhar to the grade of Fellow. The presentation of the new Fellows will take place at the AIAA's Global Air and Space 2001 International Business Forum and Exhibition on May 7 - 9, 2001, in Arlington, VA. Selection of AIAA Fellows is limited to distinguished individuals demonstrating leadership potential in the field of aerospace. AIAA is the world's leading professional society in the broad areas of aeronautics and astronautics, and the pre-eminent, worldwide aerospace information resource.

Sridhar, chief of the Automation Concepts branch at Ames, was honored for fundamental contributions to automated guidance of aerospace vehicles and the development of a passive ranging systems for low-altitude, high-speed helicopter operation.

"Banavar Sridhar is a nationally recognized authority in guidance and control for autonomous aerospace vehicles. He has over 80 publications in journals and conference proceedings (primarily AIAA)," said Dr. Herbert Rauch of Lockheed Martin's Advanced Technical Center. "He has combined his expertise in aircraft dynamics and computer vision to develop algorithms for a passive ranging system for low-altitude, high-speed helicopter operations, and subsequently he led associated flight test and experimental verification."

photo by Tom Trower

Banavar Sridhar

Ames to host AMS conference

The 35th Aerospace Mechanisms Symposium (AMS) sponsored by the Mechanisms Education Association is scheduled for May 9 – 11 at Ames. Last year, more than 250 people attended from the United States, Canada and Europe, representing academia, NASA centers and more than 80 aerospace companies. The AMS is a technical conference that promotes discussions of problems related to the design, fabrication, test and operational use of mechanisms. AMS is sponsored annually by one of NASA's field centers. Thirty papers will be presented with the emphasis on hardware developments. Authors are encouraged to discuss anomalies that have occurred during design and development of mechanisms to aid avoidance of similar problems in the future. Specific topics of discussion will include release and deployment mechanisms, space lubricants and bearings, actuators, instrument mechanisms and other space-vehicle mechanisms. Hardware will be displayed in a vendor fair on the first evening of the symposium. A tour of some of Ames' unique facilities is also planned. For more registration information, call Ed Boesiger (408) 743-2377 or Ron Mancini (650) 604-6319 or visit http://www.aeromechanisms.com/.

AEROSPACE MECHANISMS SYMPOSIA

SAFETY SNAPSHOTS

This feature is one in a series intended to inform the Ames community about facets of Ames' safety and environmental programs.

Building Emergency Action Plan (BEAP)

PROFILE

Where can you find a profile of your building, a description of its construction, hazards and emergency information? The answer is: the building emergency action plan. The BEAP is usually maintained by the point of contact for each building. If you do not know where your BEAP is located, ask your supervisor. While the original purpose for compiling BEAPs was to meet requirements to provide information to emergency responders, they have developed into a highly useful resource and orientation tool for all employees.

CLOSEUP

Julie Quanz, environmental compliance specialist, says that, as a new employee, her assignment to update Ames' BEAPs provided an unexpected opportunity to learn about facilities and operations across the center. Each BEAP is reviewed routinely or when new information about remodeling or reassignment reaches the environmental office. Particularly important are three types of floor plans with color-coded symbols indicating:

- Emergency equipment and evacuation routes (including locations of assembly areas, exit routes and emergency equipment, such as eye washes and fire extinguishers).
- Emergency responder equipment (such as shut-off valves and sprinkler systems).
- Chemical storage locations (coded by hazard class, including waste accumulation locations).

Your BEAP achieves its purpose only if it contains accurate information. If your BEAP needs an update, send a copy of pages with corrections to Julie Quanz (ext. 4-6810) or Phil Ting (ext. 4-1034) at mail stop: 19-21. Once a BEAP has been modified, the point of contact for that building will receive a copy of the updated BEAP.

For more information about emergency planning and community right-to-know, go to the Ames environmental management handbook, AHB 8800.3 chapter 14, at q.arc.nasa.gov/qe/envirolist.php.

Mac vendor showcase set

The Ames Macintosh Support Group (MSG) will present a Mac OS X vendor showcase on Monday, April 2, from 10 a.m. until 4 p.m. at the Moffett Training and Conference Center.

Mac OS X is Apple's new operating system that will ship on March 24. It is an industrial-strength, standards-based modern operating system engineered for stability, scalability and reliability. It retains the ease of use that Apple users demand.

The event, sponsored by Apple Computer, Government Micro Resources (GMR) and Affiliated Computer Services (ACS), Inc., will include various software and hardware vendors. The list of leading high-tech companies planning to attend encompasses Adobe Systems, FileMaker, Dantz, O'Reilly and Associates, Media 100 and many more.

The event focus is Mac OS X and the products that will work with it--either in Classic, Carbon or Cocoa modes when Mac OS X ships.

During the vendor showcase, Apple will have demonstrations and presentations to help users understand how to transition successfully to Mac OS X.

A web site about the showcase and an updated list of vendors planning to attend can be found at: http://msg.arc.nasa.gov/macosx/showcase.html.

VPP STAR Tip:

"VPP participants work cooperatively with the Agency (OSHA), both in the resolution of safety and health problems and in the promotion of effective safety and health programs." …Federal Register 65:45649-45663

Event Calendar

Model HO/HOn3 Railroad Train Club at Moffett Field invites train buffs to visit & join the club in Bldg. 126, across from the south end of Hangar One. Work nights are usually on Friday nights from 7:30 p.m. to 9:30 p.m. Play time is Sunday from 2 p.m. to 4 p.m. For more info, call John Donovan (408) 735-4954 (W) or (408) 281-2899 (H).

Jetstream Toastmasters, Mondays, 12 noon to 1 p.m., N-269/Rm. 179. Guests welcome. POC: Samson Cheung at ext. 4-2875 or Lich Tran at ext. 4-5997.

Ames Bowling League, Tuesdays, at 6 p.m. at Palo Alto Bowl. Bowlers needed. POC: Mina Cappuccio at ext. 4-1313 or Carmen Park at ext. 4-1215.

Ames Ballroom Dance Club. Tuesdays: West Coast Swing 4/3, 4/10, 4/17, Cha Cha AND Casino Rueda 4/24, 5/1, 5/8, Foxtrot 5/15, 5/22, 5/29, East Coast Swing and Jive 6/5, 6/12, 6/19, Paso Doble 6/26. 3 levels of classes, from Beg. to Int., 5:15 - 6:45pm. Classes in Building 944, the Recreation Center. Women dancers encouraged to join. POC: Helen Hwang, hwang@dm1.arc.nasa.gov.

Ames Diabetics (AAD), meet twice a month on first & third Wednesdays, 12 noon to 1 p.m., in the Ames Café, far corner of Sun room. Peer support group that discusses news that affects diabetics, both type I and II & exchange experiences in treatment & control & help each other best cope with the disease. No cost, sales people, leader or medical professionals. Attend a meeting or call Bob Mohlenhoff at ext. 4-2523, or email him at bmohlenhoff@mail.arc.nasa.gov.

Ames Child Care Center Board of Directors Mtg, Every other Thursday (check website for meeting dates: http://accc.arc.nasa.gov), 12 noon to 2:00 p.m., N269, rm. 201. POC: Katharine Lee, ext 4-5051.

Native American Advisory Committee mtg, Mar 27, 12 noon to 1 p.m., Ames Café. POC: Mike Liu at ext. 4-1132.

Mac OS X Vendor Showcase, Apr 2, 10 a.m. to 4 p.m., Moffett Training and Conference Center. POC: Julie Reynolds at jreynolds@mail.arc.nasa.gov.

Ames Contractor Council Mtg, Apr 4, 11 a.m., N-200 Comm. Rm. POC: David Lawrence at ext. 4-6434.

Environmental, Health and Safety Monthly Information Forum, Apr 5, 8:30 a.m. to 9:30 a.m., Bldg. 19/Rm 1040. POC: Linda Vrabel at ext. 4-0924.

Celebrate International Special Librarians' Day! Thursday, April 5, from 11:30 to 1:00 in the Ames Café. Stop by at lunchtime and learn "Whassup?" Staff from the Ames technical libraries will be on hand with displays and handouts for the most recently acquired electronic resources. POC: Jeanette Johnston, ext. 4-4051.

Nat'l Association of Retired Federal Employees, (NARFE), San Jose Chapter #50, Mtg, Apr 6, at Hometown Buffett, Westgate Mall, 4735 Hamilton Av, San Jose. Prog. & bus. mtg. at 9 a.m., followed by lunch, $6.27, in a reserved area. Program starts at 9:30 a.m. followed by lunch. POC: Mr. Rod Perry (650) 967-9418 or NARFE 1-800-627-3394.

NFFE Local 997 Union General Mtg, Apr 18, noon to 1 p.m., Bldg. 19/Rm. 2017. Guests welcome. POC: Marianne Mosher at ext. 4-4055.

Ames Amateur Radio Club, Apr 19, 12 noon, T28-N (across from N-255). POC: Michael Wright, KG6BFK, at ext. 4-6262. URL: http://hamradio.arc.nasa.gov

Ames Classifieds

Ads for the next issue should be sent to *astrogram@mail.arc.nasa.gov* by the Monday following publication of the present issue and must be resubmitted for each issue. Ads must involve personal needs or items; (no commercial/third-party ads) and will run on space-available basis only. First-time ads are given priority. Ads must include home phone numbers; Ames extensions and email addresses will be accepted for carpool and lost & found ads only. Due to the volume of material received, we are unable to verify the accuracy of the statements made in the ads.

Housing

3 bd/1.5 ba, 2-story townhouse on Luz Avenue, San José. Freshly painted inside, dishwasher, gas heat, w/w carpeting, outside child play area/large patio. 1 car port. Easy access to H101/680/280. $295K. Azucena Guzman (408) 559-2881.

NRC senior research associate & spouse seek a furnished 2 bdrm apartment or house, Feb 1 to end July 2001. Interested in buying/leasing a cheap, used car for this period. Sophie Wuerger, email to: s.m.wuerger@keele.ac.uk or phone (+44 1782 752299 or +44 1782 584214) or by fax (+44 1782 583055).

Wanted: Non-smoking female to share large 3 bd/2 ba peaceful home in Mt.View, 5 min. from Ames. Catherine (650) 938-8893.

Room for rent in Sunnyvale. Part-time roommate desired - rate negotiable. Avail. 4/1/01. (female preferred), no pets 2 bd/1bth apt. near El Camino off Mary. Barrie Anne (408) 736-8961.

Transportation

'82 Sentra, runs great, $900. Call (408) 923-5138.

'95 Mercury Tracer 'Trio' wagon, loaded, single family owner, spotless, excellent condition, maintenance records. Herb, email at: iflute@earthlink.net or call (408) 246-3616.

'97 Dodge Grand Caravan LE, 26K miles, 3.8L engine, alloy wheels, captain chairs, CD player, dual air, luggage rack, power drivers seat, rear heater, sunscreen glass, white, asking $16,000. Robert (650) 858-2630.

Miscellaneous

Sailboat 1/4 partnership. 25' Pacific Seacraft in Fort Mason marina (San Francisco). $4K or B/O. Call (415) 826-3041.

Golf clubs, with graphite shafts: Irons; 3 thru PW. Woods; 1,3,5, and 7. Also , Ping Eye-2 sand wedge (steel shaft). Head covers included for all clubs. All clubs in excellent condition. $350. Call (408) 374-2369.

San Francisco Symphony at Davies Symphony Hall (SF), two tickets, 1st tier, Sat. eve. April 28, $48 each. Call (408) 736 3642.

Teakwood coffee table, 60", marble inlayed $200. Two octagon teakwood end tables, marble inlayed $100 ea. Two bar stools, brown leather, $15 ea. Call (408) 747-0736 after 6 p.m.

Pair of Motorola T900 two-way pagers. See description at www.weblinkwireless.com. Send and receive pages, instant messaging, email, Internet news/weather/sports feeds. Walt (408) 741-0858.

Wanted: wooden bunk bed with mattresses, with full-size bottom bunk. Email: copernicus7@hotmail.com

Macho Karate sparring gear, size children's medium, black, set includes helmet, gloves, shin guards, shoe and a red/blue (reversible) chest protector. Shoes are children's large. Used once. Paid $150. Rachel (408) 942-7918.

Free good quality mirror panels. All panels are 8' tall and either 34" or 48" wide. Michelle (408) 261-8893.

Four 31 x 10.50 light truck or SUV tires. Good tread. $75 buys all. Bill(408) 744-9132.

Tanning bed, good condition. Call (408) 923-5138.

Carpool

Carpool rider/driver wanted from Los Banos to Ames. Approx. work hours 6:00 a.m. to 3:30 p.m. Call Tom, ext. 43862 or e-mail tcrawford@mail.arc.nasa.gov

Nearly brand new Pathfinder ATR tires w/ custom wheels (6 lug). Under 300 miles on them. Tires are about 31" x 11", wheels are 15" x 10" Great deal, $225. Taylor (650) 787-5435.

Spare tire mounted on rim for boat trailer, E70-14, Goodyear, good condition, $15. Also, 12 speed Shogun 400 racing bike, excellent condition, Shimano brakes, $120. Call (510) 523-8117 after 6 p.m.

Ames public radio

1700 KHz AM radio -- information announcements & emergency instructions, when appropriate, for Ames employees.

Astrogram deadlines

All Ames employees are invited to submit articles relating to Ames projects and activities for publication in the *Astrogram*. When submitting stories or ads for publication, submit your material, along with any questions, in MS word by e-mail to: astrogram@mail.arc.nasa.gov on or before the deadline.

Deadline	*Publication*
Mon, Apr 2	*Mon, Apr 9*
Mon, Apr 16	*Mon, Apr 23*
Mon, Apr 30	*Mon, May 7*
Mon, May 14	*Mon, May 21*
Mon, May 28	*Mon, Jun 4*
Mon, Jun 11	*Mon, Jun 18*
Mon, Jun 25	*Mon, Jul 2*
Mon, Jul 9	*Mon, Jul 16*

Exchange Information

Information about products, services and opportunities provided as a service to the employee and contractor community by the Ames Exchange Council.

Beyond Galileo (8 a.m. to 2 p.m.)

Stop by and see our new gift shop. New items arriving every day. Sundries on hand for those at-work emergencies, i.e. aspirin, cough medicine, etc.

Café Specials (6 a.m. to 2 p.m.)

March is "Nutrition Month." Watch for heart-healthy menu items.

Visitor Center Shop (8 a.m. to 4 p.m.)

NASA logo merchandise, souvenirs, toys, gifts and educational items.

Tickets, etc... (8 a.m. to 4 p.m.)

Now open 8am-2pm in the Beyond Galileo gift shop for transit and entertainment tickets. Tickets are now available for Disneyland and the new California Adventure Park. Call for info and prices. Following are upcoming events:

- American Musical Theatre of San José 3 Musketeers, Sat. Mar. 24, 8:00 p.m. discount tickets, $45.
- San José Sabercats Arena Football Sat. April 14 7:30 p.m. Los Angeles Avengers vs. Sabercats. Lower-level seat at discount price, $15.
- Best of Broadway--Saturday Night Fever, Sun. April 15, Matinee, Orphem Theatre
- San Francisco Giants- PacBell Park, Sat. May 26 vs .Colorado 1:05 p.m., Fri. Sept. 28 vs. San Diego, 7:35 p.m. View level seats available.

NASA Lodge (N-19) 603-7100

Open 7 days a week.

NASA Swim Center (N108) 603-8025

The swimming pool is available for group parties. Everyone is welcome. Summer lifeguards are needed.

Vacation Opportunities

Lake Tahoe-Squaw Valley townhse, 3bd/2ba, view of slopes, close to lifts. Wkend $490, midwk $180 nite. Includes linens, firewood. Call (650) 968-4155 or e-mail DBMcKellar@aol.com

South Lake Tahoe cottage with wood fireplace and hot tub. Rates from $50 to $130 per night. Call (650) 967-7659 or (650) 704-7732.

Calling for nominations for the NASA Software of the Year award

The NASA Software of the Year award competition is designed to recognize outstanding software developed by NASA. This very prestigious recognition includes a monetary Space Act Award of up to $100,000 and an award certificate.

The eligibility criteria include: 1) NASA must have intellectual property interest; 2) the software must have been supported, adopted, sponsored or used by NASA; 3) the software must be significant to the NASA mission; 4) experimental phases must have been successfully completed to the satisfaction of the customer and; 5) the software must have been tested and documented per the requirements of NPD 2820 section 1(e).

Ames Research Center has won or placed in the NASA Software of the Year competition for the past three years. Approximately $200,000 in total disbursements was distributed to those software teams.

Entries and supporting materials should be sent electronically to Betsy Robinson at: brobinson@mail.arc.nasa.gov) in the Ames Commercial Technology Office, by Thursday, April 12, 2001. For forms and specific award criteria information, contact Robinson at ext. 4-3360 or via email. Additional information is also available at the following web site: http://icb.nasa.gov/

THE AMES Astrogram

The Ames ASTROGRAM is an official publication of the Ames Research Center, National Aeronautics and Space Administration.

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THE AMES Astrogram

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Official Business
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